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Michael Darweesh

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EXAMINER

PALIWAL, YOGESH

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/658,149	Applicant(s) DARWEESH ET AL.	
	Examiner YOGESH PALIWAL	Art Unit 2435	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6-14,17-27 and 29-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-14,17-27 and 29-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

- Applicant's submission of RCE filed on 09/15/2008 has been entered. Applicant has amended claims 1, 2, 6-8, 10, 12, 14, 17, 23 and 26; canceled claims 3-5, 15, 16, and 28 and added claims 31-34. Currently claims 1, 2, 6-14, 17-27 and 29-34 are pending in this application.

Response to Arguments

1. Applicant's arguments with respect to claims 1, 12, 17 and 23 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 23-27 and 29-30 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 23 recites, "A system for generating a manifest comprising: a first parser that.....; a first manifest generator.....; a security component....". The claimed system direct to *software per se*, which do not show the physical transformation. Therefore, the claimed "system" would amount to computer programs, a type of functional descriptive material, per se. As such, the claimed system/apparatus must include the hardware

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necessary to realize any of the functionality of the claimed modules and produce a useful, concrete and tangible result. Absent recitation of such hardware as part of the claimed apparatus, it is considered non-statutory.

Claims 24-27, and 29-30 depend on claim 23 and also do not include any hardware necessary to realize any of the functionality of the claimed modules, therefore they are rejected with the same rationale applied against claim 23 above.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 6-10, 12-14, 17-21, 23-17, and 29-34 are rejected under 35

U.S.C. 102(b) as being anticipated by England et al. (US 6,330,670 B1), hereinafter

“England”.

Regarding **Claim 1**, England discloses a method of generating a manifest that governs the execution of a software object, the method comprising:

receiving a specification indicative of requirements for the execution of the software object, the specification referring to one or more components (see, Column 18, lines 39-54);

generating a manifest (see, Column 9, lines 16-29, “right manager certificate”) based on said specification, including accessing said one or more components, said manifest comprising one or more rules governing what may be loaded into for ensuring integrity of an address space that is used for execution of the software object (see, abstract and also Fig. 9), the one or more rules incorporating a list of acceptable and unacceptable modules, wherein the acceptable modules may be executed in the address space of the software object and the unacceptable modules are unconditionally barred from executed in the address space of the software object (see, Column 18, line 55- Column 19, line 9).

Regarding **Claim 2**, the rejection of claim 1 is incorporated and England further discloses wherein said specification identifies the acceptable and unacceptable modules, and wherein generating the manifest comprises including, in said manifest, the identities of the acceptable and unacceptable modules identified in the specification (see, Column 9, lines 16-29).

Regarding **Claim 6**, the rejection of claim 2 is incorporated and England further discloses wherein said specification indicates whether said manifest will contain hashes for identifying the identifying the unacceptable modules (see, Column 12, lines 32-36).

Regarding **Claim 7**, the rejection of claim 1 is incorporated and England further discloses wherein at least one of said acceptable modules comprises a key, and wherein said specification indicates that the at least one of said acceptable modules signed with said key may be loaded into said address space (see, Column 10, lines 41-51) and wherein generating said manifest comprises: retrieving said key from a file identified in said specification; and including said key in said manifest (see Column 14, lines 58-67).

Regarding **Claim 8**, the rejection of claim 1 is incorporated and England further discloses wherein generating said manifest comprises:

Computing a hash of at least one of said unacceptable module and including said hash in said manifest (see, Column 12, lines 32-36).

Regarding **Claim 9**, the rejection of claim 1 is incorporated and England further discloses wherein said generating act comprises: based on said specification, creating a data structure representative of said specification (see, Fig. 9); and generating said manifest based on said data structure (see, Column 9, lines 16-29).

Regarding **Claim 10**, the rejection of claim 1 is incorporated and England further discloses receiving a key associated with a vendor or distributor of said software object; signing said manifest with said key to produce a digital signature; and including said digital signature in said manifest (see, Column 19, lines 7-9).

Regarding **Claim 12**, England discloses a computer-readable medium encoded with computer- executable instructions to perform a method of generating a manifest, the method comprising:

 parsing a specification of requirements to be included in the manifest, the requirements defining a policy configured to preclude loading of rouge module into an address space of a software object associated with the manifest (see, Column 9, lines 16-29 and Column 18, lines 39-54);

 accessing one or more components that are identified by the specification and that are external to the specification (see, Column 9, lines 16-29); and

 generating a manifest based on at least one of the accessed objects (see, Column 9, lines 16-29, “right manager certificate”).

Regarding **Claim 13**, the rejection of claim 12 is incorporated and England further discloses:

 including in said manifest an identification of said executable module and an indication that either:

 said executable module may be loaded into said address space; or said executable module may not be loaded into said address space (see, Column 18, line 55- Column 19, line 9).

Regarding **Claim 14**, the rejection of claim 12 is incorporated and England further discloses wherein said rouge module is operative to perform an unauthorized operation on the one or more components (see, Column 9, lines 16-29 and Column 18, lines 39-54).

Regarding **Claim 17**, England discloses a method of specifying constraints on the use of software comprising:

creating a specification for explicitly limiting what may be loaded into an address space of the software, the specification referring to one or more components that are external to the software and external to the specification (see, Column 9, lines 16-29 and Column 18, lines 39-54);

using a manifest generation tool to generate a manifest based on the specification (see, Column 9, lines 16-29, “right manager certificate”), wherein the manifest generation tool does at least one of:

including, in said manifest, data from one of said one or more components (see, Fig. 9 and also Column 9, lines 16-29); or

computing a value based on one of said one or more components and including the computed value in said manifest (see, Fig. 9 and also Column 9, lines 16-29); and

distributing the generated manifest with the software (see, Column 10, lines 14-24), wherein the manifest comprises rules explicitly limiting what may be loaded into the address space of the software, thereby ensuring a secure address space for executing the software (see, Column 10, lines 14-24 and Column 18, line 55 - Column 19, line 9).

Regarding **Claim 18**, the rejection of claim 17 is incorporated and England further discloses wherein said one or more components comprises a module, wherein said specification indicates either that said module may be loaded into said address

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space or that said module may not be loaded into said address space (see, Column 10, lines 14-24 and Column 18, line 55 - Column 19, line 9), and wherein said manifest generation tool does at least one of:

including an identifier of said module in said manifest (see, Column 9, lines 11-29); or

computing a hash of said module and including the hash in said manifest (see, Column 12, lines 32-36).

Regarding **Claim 19**, the rejection of claim 17 is incorporated and the England further discloses wherein said one or more components comprise a key, wherein said specification indicates either that modules signed with said key may be loaded into said address space or that modules signed with said key may not be loaded into said address space (see, Column 10, lines 41-51), and wherein said manifest generation tool retrieves said key from a file identified in said specification, and includes a certificate for said key in said manifest (see Column 14, lines 58-67).

Regarding **Claim 20**, the rejection of claim 17 is incorporated and England further discloses wherein said manifest generation tool creates an intermediate data structure representative of said specification (see, Fig. 9), and generates said manifest based on said intermediate data structure (see, Column 9, lines 16-29).

Regarding **Claim 21**, the rejection of claim 17 is incorporated and England further discloses wherein receiving a key from further comprising:

receiving a key associated with a vendor or distributor of the software; signing said manifest with said to produce a digital signature; and including said digital signature in said manifest (see, Column 19, lines 7-9).

Regarding **Claim 23**, England discloses a system for generating a manifest comprising:

a first parser that receives a manifest specification indicative of requirements for a manifest, the first parser generating a representation of said requirements, said requirements relating to what may be loaded into an address space of a software object (see, Column 9, lines 16-29 and Column 18, lines 39-54), said specification referring to one or more components external to said software and external to said specification (see, Column 9, lines 16-29);

a first manifest generator that generates a manifest based on said representation and includes in said manifest information contained in, or computed based on, said one or more components (see, Column 9, lines 16-29, “right manager certificate”); and

a security component (see, Column 8, lines 56-65, Column 9, lines 11-15, “DDMOS”) that imposes a permeable barrier for selectively allowing acceptable modules to be loaded into the software space of the software object and blocking unacceptable modules from being loaded into the software space thereby preventing unauthorized tempering of the one or more components (see, Column 8, lines 56-65, Column 9, lines 11-15, “DDMOS”).

Regarding **Claim 24**, the rejection of claim 23 is incorporated and England further discloses wherein said one or more components comprise a module, and wherein said first manifest generator generates said manifest by including, in said manifest, a datum that identifies said module (see, Column 9, lines 16-29).

Regarding **Claim 25**, the rejection of claim 24 is incorporated and England further discloses wherein said datum comprises a hash of said module (see, Column 12, lines 32-36).

Regarding **Claim 26**, the rejection of claim 23 is incorporated and England further discloses wherein said one or more components comprise a key, wherein said specification indicates either that acceptable modules signed with said key may be loaded into said address space or that unacceptable modules signed with said key may not be loaded into said address space (see, Column 10, lines 41-51), and wherein said first manifest generator retrieves said key from a file identified in said specification and includes said key in said manifest (see Column 14, lines 58-67).

Regarding **Claim 27**, the rejection of claim 23 is incorporated and England further discloses wherein said first manifest generator generates a digital signature for said manifest by signing said manifest with a key associated with a vendor or distributor of said software object, and includes said digital signature in said manifest (see, Column 19, lines 7-9).

Regarding **Claim 29**, the rejection of claim 23 is incorporated and England further discloses a second parser that receives a manifest specification indicative of requirements for a manifest, the second parser generating a representation of said

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requirements in the same format as said first parser (see, Column 18, line 55- Column 19, line 1), wherein said first parser parses specifications in a first format and second parser parses specifications in a second format different from said first format, and wherein first manifest generator generates said manifest based on a representation produced either by said first parser or said second parser (see, Column 19, lines 45-53).

Regarding **Claim 30**, the rejection of claim 23 is incorporated and England further discloses a second manifest generator that generates a manifest based on said representation, wherein said first manifest generator generates a manifest in a first format and second manifest generator generates a manifest in a second format different from said first format (see, Column 19, lines 54-61).

Regarding **Claim 31**, the rejection of claim 1 is incorporated and England further discloses wherein at least one of the unacceptable modules is identified in the list by a version number (see, Column 9, lines 20-27).

Regarding **Claim 32**, the rejection of claim 1 is incorporated and England further discloses wherein at least one of the unacceptable modules is identified in the list by a range of version numbers (see, Column 9, lines 20-27).

Regarding **Claim 33**, the rejection of claim 12 is incorporated and England further discloses wherein the policy comprises an identity of an unacceptable module that is unconditionally barred from being executed in the address space of the software object (see, Column 9, lines 11-29).

Regarding **Claim 34**, the rejection of claim 33 is incorporated and England further discloses wherein the unacceptable module is identified in the policy by a hash identifier (see, Column 12, lines 32-36).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over England in view of Watanabe et al. (US 2002/0108041 A1), hereinafter Watanabe.

Regarding **Claims 11 and 22**, the rejections of claims 1 and 17 are incorporated and England discloses signing a manifest using the private key of the vendor or distributor (see, Column 19, lines 7-9). England does not explicitly disclose using hardware security module to sign manifest, said hardware security module being adapted to apply a key associated with a vendor or distributor of said software object without revealing said key outside said hardware security module.

However, Watanabe, in the same field of endeavor of cryptography, discloses signing digital document with private key of the signing party without revealing private key outside hardware security module (**Paragraph 0195, One of the approaches to solve the problems of security assurance and enhanced computing speed is the**

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use of a hardware security module (HSM) in holding the signature keys (or private keys) and executing signature processing.”)

Therefore, it would have been obvious at the time the invention was made to one of ordinary skill in the art to use in the system of England, during a creation of cryptographic envelopes, use a hardware security module, as taught by Watanabe to provide highly temper resistant and security for the private key of the vendor

(Watanabe, Paragraph 0195)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOGESH PALIWAL whose telephone number is (571)270-1807. The examiner can normally be reached on M-F: 7:30 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on (571) 272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Y. P./

Examiner, Art Unit 2435

/Kimyen Vu/

Supervisory Patent Examiner, Art Unit 2435